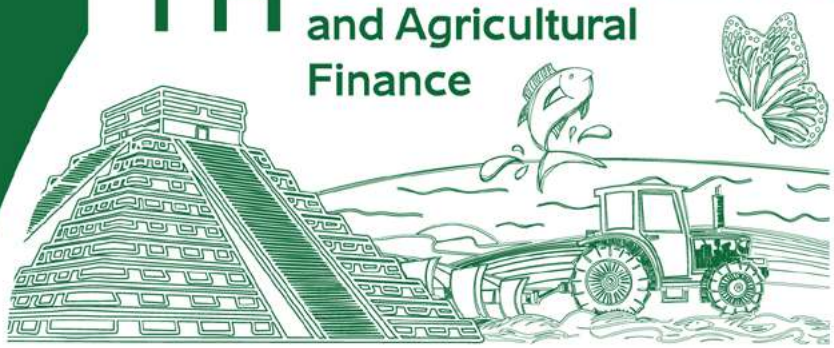
7TH World Congress on Rural and Agricultural Finance



RESPONSE TO THE NEW GLOBAL SCENARIO MARKED BY THE EFFECTS OF CLIMATE CHANGE AND COVID

Finance as a tool for mitigating
the direct and indirect adverse effects on
agricultural and rural enterprises

Report - Conclusions - Recommendations

SUMMARY [1]

Response to the New Global Scenario: Agricultural Development and Sustainable and Inclusive Food Systems

- The current environment creates new challenges. Changes have accelerated and the traditional risks in the agricultural sector, such as the lack of information, high transaction costs, geographic scattering and seasonal nature have become more pronounced. The damaging blows inflicted on the sector in recent years by the pandemic, for instance, have been compounded by the serious impact of inflation and high production costs. These have proven to be most damaging to the smallholders and medium farmers, who not only continue to experience problems in obtaining access to the financial system and the lack of government attention to their needs, but also have to struggle against the harmful effects produced by climate change.

- Although the financing of the agricultural and rural sector has proven to be resilient, allowing it to weather certain negative environmental effects, it continues to be insufficient and piecemeal, leaving farmers dependent upon informal financial sources.

- Public development banks (PDBs) have an important role to play in providing solutions to the problems of the agricultural sector, insofar as matters within their competences and mandates are concerned.

- National public indebtedness scaled upwards as a result of the pandemic set off by Covid-19, worsening the countries' budget limitations and forcing them to work out formulas to encourage private sector participation.

- Three important restrictions exist that need eliminating from agricultural and rural sector finance: the perception of the risk, the high costs of loans, and the lack of financial innovation.

- Insofar as compliance with the sustainable development goals is concerned, advances are not keeping pace with the commitments assumed by the countries in international agreements.

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1 The various points included in the synthesis were presented and commented on at the Closing Session.

- In the area of green finance, it is necessary to move ahead in developing a taxonomy that would make the use of a common language possible for defining which activities are environmentally sustainable. Those classifications can help increase capital flows prioritizing green projects needed for economic decarbonization. Unfortunately, the implementation of such taxonomies, together with the measurement and verification of certain practices that require the use of rigorous analytical procedures, is seriously in doubt because of the possibly high costs involved.

- Public goods like infrastructure, water, energy, and education, among others, are extremely important for laying the necessary groundwork to boost projects in the agricultural and rural sector. That is why government action is essential, duly coordinated at its different levels –national, provincial and local.

- Concern is growing –particularly in the African countries– over the possible implications for food security in the poorest households, due to the global concentration of basic food production in a diminishing number of ever larger enterprises in a context of high prices and rising demands, and the loss of crops to climate catastrophes.

Technological Innovations for Agricultural Finance in Latin America

- The importance of technology for addressing the characteristic problems of the sector was stressed, such as the geographic scattering of producers, high transaction costs, and the presence of asymmetric information, among other matters.

- In its own experience, the ProAgro insurance company concluded that without risk management instruments like insurance policies, loan origination processes would become hard to manage, inasmuch as the financial institutions would be left exposed by the non-compliance of its borrowers. In this connection, it was explained how technology could be used to correct problems, such as the lack of information or high operating costs. Today, the new technologies are extremely useful for developing products that best meet the needs of the different kinds of producers.

Sustainable Agricultural and Rural Development Finance in Latin America and the Caribbean: Role of the National Public Development Banks

- Financing is not an isolated element; it is part of the value chain in agricultural and rural activities.

- There is no single agricultural finance model; the model used depends on the particular characteristics of each of the countries involved.

- Public development banks play a first-class counter-cyclical role in sustaining agricultural and rural credit markets. This fact was made evident in the recent crisis brought on by COVID-19.

- Emphasis was given to the catalytic role played by public development banks in facilitating the transition of the agricultural sector towards that of a green economy, considering that the sector is responsible for one-third of the greenhouse gas emissions.

- In presenting their experiences, the public development banks, Banco de la República Oriental de Uruguay (BROU) and Banco Provincia de Buenos Aires, together with the French Development Agency (AFD), stressed the lesson learned about the importance. for achieving a sustainable agricultural and rural finance system, of building up their internal capacities and corporate governance.

Financing of the Seafood Products Value Chain in Africa: Expansion of the Blue Economy

- The presentation by the member institutions of the African Rural and Agricultural Credit Association (AFRACA) put forward an analysis of the value chain and of the importance of the blue economy in many of the African countries. They underscored the fact that major opportunities for finance and investment can be found along the entire seafood value chain, in which public development banks should play a more prominent role.

- Foremost among the key elements for success in serving the seafood products sector

is: the existence of associative enterprises to mitigate the risk and finance the supply chain, particularly through formal financing systems and microfinance plans, particularly considering that the lion's share of the credit targeting the sector continues to be of informal origin, whose main sources are family members and friends. In this context, medium- and long-term loans should be expedited, hand-in-hand with training and technical assistance.

- As in the cases of other economic sectors, the importance of and need for women's financial education and financial and social inclusion in all activities of the seafood value chain was addressed, inasmuch as they have been relegated to performing only secondary activities.

- Banks require a specialized profile and a closer tie-in with public policy in order to serve this sector.

Inclusive Green Finance as a Critical Trigger for a Sustainable Agriculture and Food System

- The major challenge in Asia was being able to design and implement innovative plans to reach the smallholders in the areas most vulnerable to the detrimental effects of climate change, for this region is particularly hurricane-prone.

- Although the Asian institutions have made significant advances in the areas of adaptation and mitigation, much remains to be done. Credit is still in short supply, products and services better suited to the needs of the producers are lacking, and closer coordination is needed with public policy measures.

- The innovative plans being implemented rest on the inclusion of ESG (ethical, social and governance) criteria, internal capacity development and the reinforcement of corporate governance.

Guarantee Systems as Drivers of Agricultural Finance

- Guarantee systems for the production sector bear a specific weight in their regional environments. Both they themselves and their implementation are heterogeneous, similarly to their business models, and are influenced by their environment.

- Reciprocal guarantee companies (RGCs) are highly advantageous for the enterprises, because they give less importance to their size and history in loan decisions, reduce the need for real guarantees, and favor access to credit on better terms as to costs and time periods. All of this is possible because the RGCs become intermediaries between the SMEs and the financial institutions and assume the responsibility for negotiating the loan.

- Guarantee funds in Latin America serve as a key mechanism for the inclusion of smallholders in scattered rural territories, where the heaviest vulnerability and highest levels of rural poverty are to be found.

- The guarantee systems, risk management instruments, value network integration programs, and technological innovations, among other elements, are valuable tools for overturning the low levels of financial inclusion that are more accentuated among agricultural producers.

CONCLUSIONS AND RECOMMENDATIONS

SESSION 1: RESPONSE TO THE NEW GLOBAL SCENARIO: AGRICULTURAL DEVELOPMENT AND SUSTAINABLE AND INCLUSIVE FOOD SYSTEMS

- High levels of inflation, rising interest rates and a period of economic slowdown in several of the world's economies are the distinguishing features of the post-pandemic world. Large gaps among countries and an increasing number of risk elements can be seen, making it necessary to reach consensuses on these matters. Among the most important repercussions of the Covid-19 pandemic were the widespread inflation and its effect on agricultural product value chains, pushing up the cost of agricultural inputs and transportation. At the same time, climate change continues to threaten the production of small farmers in many regions of the world, with flooding and more heat waves that spark droughts and fires. Financing and the creation of special financial lines or programs with terms tailored mainly to meet the needs of smallholders are essential for confronting these problems, so that they can serve as veritable supporting elements for the sector.

- **In order to achieve global food security, it is necessary to invest in the small farmers.** Some 90% of the populations of the low-income developing countries either have no access to basic services, or the terms on which they do have access are inadequate. And most of the governments of those countries do not have the wherewithal to undertake investment at the level needed. It is for this reason that private sector participation is essential for augmenting the sector's financing and an example of one of the alternatives boosted by the governments are the mixed public-private associations, in which the private party is responsible for providing part of the service. But in order for such associations with the private sector to be successful, it is first necessary to have a clear picture of the needs to be covered. **Increasing agricultural finance requires the support of the private sector**, considering, as well, that the efforts of the small farmers are essential in the fight against climate change.

- **Agri-food systems are confronting new challenges in this world plagued by risk and uncertainty**, including fertilizer supply chain problems, high energy and fuel prices, and the need to guarantee food security in order to avoid seeing an increase in the population that is experiencing hunger.

- The **agricultural sector is highly concentrated insofar as agri-food inputs are concerned**, with Russia and Ukraine being the foremost global suppliers of wheat and sunflower oil, the former providing 30% and the latter, 55% of the world's exports of those products. It is for that reason that the crisis triggered by the war between those two countries set off **price escalation on a global scale**. The increase in the price of wheat resulting from the imbalance between the demand and supply, compounded by the restrictions on the export of wheat and other essential foods is likely to reduce world trade in meat, considering that cattle feed is wheat-based. This rise in the price of cattle feed means that dairy and meat products are more expensive. World wheat production is expected to reach unheard-of levels in 2023, with the inventories being concentrated in Russia and China. As for global rice markets, both production and consumption are expected to fall, but inventories remain adequate, at the third highest level on record. World prices of this product have remained stable in comparison with those of other food grains, although the trade in rice could decline from its high level.

- **Food price indexes have risen over the past year**, reaching an inflection point in March 2022. The decline in prices over the following six months can be attributed to the increase in exports from Canada and the signing of trade agreements. The effect of the price increase **will be reflected in growing global debts, above all on the part of food importers. The most vulnerable countries are now paying higher rates for smaller volumes of product, it being estimated that** the 64 most vulnerable countries **paid** an additional US$25,000 million.

- **It is expected that in the mid-term:** 1) The growth in consumption of the principal food products and grains will be found mainly in Asia and Africa. However, the increase in production foreseen in many regions may not be sufficient to meet the growing world demand; 2) Traditional exporters will see their trade surpluses expand, while countries with growing populations and limited resources will be forced to increase their imports; 3) This rising interdependence among trading partners reveals the importance of having a properly operating multilateral trading system, one that is transparent and regulation-based; 4) Market supply and demand may create potential challenges to the growth of trade; and 5) A significant increase is needed in agricultural productivity at the global level in order to reach the zero hunger targets and reduce greenhouse gas emissions, with a view to confronting the challenge created by climate change.

- **The interaction between economic growth and demographic changes influences the demand for food, trade and markets in different ways.** Urbanization is associated with far-reaching changes in lifestyle and consumption patterns. Heavy population increases in Asia and Africa pushed up the demand for food products in these regions. Climate change has an impact on agricultural and food systems, eliciting food and water insecurity among millions of people across the world.

- **The principal risks affecting agriculture include: 1) high concentrations of CO_2 in the atmosphere; 2) climate-related pests and diseases; and 3) droughts and fires. The sites most exposed to these risks are to be found in Africa, Asia, Central and South America, small islands and the Arctic.** Climate change puts crop production at risk. The results presented by the Food and Agriculture Organization of the United Nations (FAO) for scenarios considering different methods of greenhouse gas emission and atmospheric concentrations reveal the following figures projected for 2069-2099 in comparison with the period of 1983-2013: 1) for corn: there are two scenarios, one moving from 5% growth to a decline of 6%; and the other showing growth of 1% to a 24% reduction. The heaviest losses would occur in regions of North America, Mexico, East Africa, Central Asia and China; 2) in the case of wheat, the world's second largest crop in terms of production, estimates foresee a first scenario of growth of between 5 and 9% and another of between +10 and +18%. The heaviest losses in spring wheat will be found in Mexico, southern United States, South America and Southern Asia; 3) for rice: the scenario foresees growth of 23% on the one hand, and 2% on the other, with the heaviest losses to be found in Central Asia.

- **There are agricultural lands with limited water sources.** By way of example, there are 128 million hectares (11%) of rainfed croplands that experience from a high to a very high incidence of severe drought; 656 million hectares (14%) of pastures with a high to a very high incidence of drought; and 171 million **hectares (62%) of irrigated cropland with high to very high water stress** that account for almost 7% of all rainfed croplands.

- **Hunger in Africa is rising more heavily than in any other region of the world, with one out of every five people having faced hunger in 2021. Malnutrition is more prevalent in the region and rose more than two percentage points prompted by COVID–19.** Africa, with 57.9%, has the highest level of food insecurity in the world, and close to one of every four people suffered that insecurity in 2021. At the subregional level, Central Africa showed

the highest levels of insecurity, which reached 75.3%. Almost 80% of the African people were unable to eat a healthy diet in 2020, as could be seen in severe cases in the eastern, western and central regions of the continent.

- **Somber economic prospects, conflicts and geopolitical tensions, the rising cost of agricultural inputs and growing climate variability continue to jeopardize the stability of the world food market.** Therefore, in order to keep the most vulnerable countries from being adversely affected, it is necessary to maintain the commercial openness of the agricultural and food markets, in such a way that greater economies of scale can be attained and competition and a wider variety of products ensured at potentially more stable prices. International organizations like FAO and the IMF have ordered the creation of plans and tools to finance food imports. Even so, **it is essential to tackle the challenge posed by fertilizers and other agricultural inputs**. FAO has developed an interactive map for that purpose of the trade in nitrogen-, phosphorus- and potassium-based fertilizers that would help countries assess the imports needed and available unexported supplies, together with a methodology for prioritizing the allocation of international fertilizer supplies to the African countries. This region is also promoting the use of soil nutrient maps to improve efficient fertilizer use.

- The World Bank and the OECD hope that food systems will offer responses to a threefold challenge: 1) providing sufficient and nutritious food products to the entire global population; 2) providing for rural development, with adequate income for the food chain participants; and 3) making changes sustainably, in such a way that as to ensure better water and soil management. **The addition of short-term elements like the pandemic, war and inflation to these structural challenges has made it more difficult to provide satisfactory responses.**

- Smallholders and SMEs not only have to confront superimposed global shocks, but also diverse challenges like the following: 1) the exclusion of women, young people, and indigenous groups and communities; 2) rising prices of food products, fertilizers and fuel; 3) climate change; 4) economic recession triggered by COVID–19 and its subsequent aftermath brought on by global measures taken to contain inflation; 5) the limited public resources allocated to rural policies; and 6) the growing risks perceived by the suppliers of financial services, which produce delays in lending.

- **Attaining some of the sustainable development goals will be difficult, particularly those having to do with the eradication of poverty and hunger. In 2021 alone, the number of hungry rose by 46 million, to reach a total of 128 million**. The International Fund for Agricultural Development (IFAD) is implementing programs to help fight hunger, using an inclusive financial policy for the rural medium (IFPR). The aim of this policy is to help double the Fund's impact by 2030 in serving as a guide to investments that could reinforce: 1) the productive capacities of the low-income population in rural areas; 2) the benefits they receive for participating in the market; and 3) the resilience of their economic activities to climate change.

- In this regard, it should be stated that IFAD has invested US$5,100 million between rural and inclusive finance in the following manner: 1) to support Fintech growth by means of loans to the consumer sector and factoring; 2) by digitalizing rural banks through community-based finance and by financing the value chain; 3) by boosting projects like Innovatech, whose objective is to develop digital agricultural (AgriTech) and financial (FinTech) solutions, in order to facilitate smallholder access to the market and to financial and non-financial services.

- Insofar as the environment is concerned, IFAD has raised over US$ 336.5 million in global funds over the past three years for the climate and environment. Global investment in climate-related activities is in excess of US$1,200 million, of which more than 90% are allocated to financing adaptation. For that reason, it created its Private Sector Finance Program (PSFP) to activate greater private sector investments to benefit smallholders and poor rural communities that participate in local food systems. This program is being implemented in 30 countries of Africa, Asia and Latin America.

- IFAD, in order to reach its goals, has defined strategies with an inclusive rural finance approach. There is the **ICT40 Strategy**, which provides a framework for the adoption of information and communication technology solutions in three areas of interest: 1) promoting solutions that improve access to information, above all about the market and climate; 2) promoting solutions that improve access to services, and 3) promoting financial inclusion. The **Private sector participation strategy**, for its part, envisages: 1) the deployment of financial instructions that perform a catalytic function for private sector finance of small-scale rural and agricultural microenterprises; 2) using the loan and subsidies program (LaSP) to attract

private sector investments; 3) developing inclusive value chains with private sector partners; and 4) testing new scalable technologies and cost-efficient solutions for long-term challenges in rural communities. And lastly, the **Biodiversity Strategy**, which helps countries protect, restore and promote biodiversity and its sustainable use in the rural system in a more systematic, organized and widespread manner.

- Insofar as **the integration of agricultural enterprises into food markets** is concerned, attention was called to **case studies of successful projects revealing the use of varied solutions**, in which three models for organizing production could generally be identified: 1) vertically integrated firms, 2) tractor or anchor enterprises that work with small farmers, and 3) cooperatives or associations of small producers. Six value adding strategies were stressed for producing good results: 1) fulfilling the basic requirements of foreign markets, under government standards or those imposed by private buyers; 2) obtaining the credentials of attributes, such as organic or fair trade certification; 3) developing easily consumable products with more highly valued qualities; 4) taking advantage of temporary early offering windows –in other words, entering markets during particular periods when competition is almost nonexistent; 5) developing byproducts such as, for example, essential oil of lemon, organic purés, etc.; and 6) brand differentiation. Public-private collaboration is essential in all of these strategies.

- **Despite the large number of new financing structures and of specialized financial intermediaries that comprise the local financial system, small entrepreneurs still have problems in acceding to credit.** It is estimated that roughly 500 million entrepreneurs require some US$ 450,000 million in annual financing. Furthermore, only 4.7% of the adults living in rural areas of developing countries have received a single loan from a formal financial institution, and only 5.9% have bank accounts. In the case of Africa, this figure is even smaller, with only 1% of local bank finance going to the agricultural sector. Foremost among the main reasons for this situation is the perceived risk and the lack of experience of financial institutions in working with this population sector, which impedes them from offering financial products and services tailored to the needs of this segment. As a result, about 66% of the agricultural SMEs have no access to credit, which is equivalent to some US$ 106,000 million a year. It can be assumed that the problems are even greater when climate financing is being sought.

- **Although diverse actors are involved in intermediating finance for agricultural SMEs,**

the lack of coordination or of mutual understanding among them leads to contradictory actions, a duplication of efforts and mutual displacement in this area. Furthermore, it is difficult for many agricultural SMEs to navigate the financial system, because a significant number of initiatives and/or portfolios remain small-scale and the financial institutions do not deepen and expand their scope. Seed and growth capital suppliers, for their part, are poorly linked up with each other, as are national and international financing sources that also tend to be misconnected, thus limiting the impact of investments financed by donors, international organizations or the national development finance institutions themselves.

- **Agricultural SMEs play a key role in food transformation systems** in the light of the following: 1) the SMEs work throughout the entire food system as input suppliers, producers, transporters, marketers, transformers and retailers; 2) it is more likely that small farmers will adopt sustainable agricultural practices if they are closely tied in with agribusinesses along the length of the value chain; and 3) small producers are responsible for the greater portion of the food items produced for consumption in some continents, with Africa being a telling example.

- **Traditional financial institutions tend to use the same processes to grant loans of different sizes, making certain customers overly expensive in relation to their possible income generating capacity**. Microfinance institutions have problems serving customers with needs in excess of US$50 thousand, because their origination processes are inadequate for covering the potential risks and because of a lack of coincidence with their customers' needs. Some solutions are available in the market and IFAD can provide the following examples: 1) **The Private Sector Finance Program**, which seeks to increase the earnings, food security and resilience of small rural producers in low-income, medium-income and fragile income countries through debt financing, risk mitigation capital and guarantees and shared risk facilities. Efforts in countries where IFAD operates, targeting low-income countries, center on youth employment, women's empowerment, and the environmental sustainability and climate resilience of small producers and low-income rural communities. 2) **The Agribusiness Capital Fund**, an impact investment fund that seeks to invest, catalyze combined capital and mobilize technical assistance for deployment in unserved agribusiness segments. Institutions like IFAD, development banks and others seek to reduce the limitations on agricultural SME financing through programs of this kind.

- As stated above, **scalable solutions are needed to augment the green financing that still has numerous barriers to confront. Existing models frequently center on production alone, imposing additional financial pressure on small farmers that are frequently already heavily in debt**. Scalability can only be achieved by designing simple and replicable solutions that contain information about the farmers' needs and that take a more systemic view of the value chains. These solutions should also bear in mind the risks associated with long-term investments and the nature of climate finance. It was stressed in this connection that the forthcoming water crises in Latin America and the Caribbean will require solutions that consider green finance.

TECHNOLOGICAL INNOVATIONS FOR AGRICULTURAL FINANCE IN LATIN AMERICA AND THE CARIBBEAN

- Estimates reveal **the existence in the developing economies of a US$5 billion financial deficit for the formal Micro and SMEs, women being the most strongly affected, with exclusion from the system amounting to 32%**. If we were to add the informal Micro and SMEs to the initial sum, the shortfall would amount to a potential demand for some US$7.7 billion in financing.

- **Credit penetration in the agricultural sector is low (8.1%) in the LAC region. However, the situation varies heavily among the countries in the region, where Paraguay accounts for close to 30%, while in Mexico penetration does not even reach 5%**. Furthermore, the gross domestic agricultural product (GDAP) amounts to 4.7% in LAC, with annual growth of 2.7% and generates an average of 15% of the employment. The agricultural sector in countries like Belize, Bolivia, Ecuador and Paraguay bears greater weight in generating more than 25% of the employment and export earnings in excess of US$250,000 million. Brazil, for its part, possesses a figure in the neighborhood of 20 million rural economic units (80% of them low-scale).

- **The pandemic hastened digitalization in the financial sector and increased the number of bank accounts, payment methods and digital tools developed by Fintech enterprises to accede to financial services**. On the credit supply side, the emergence of this kind of solution is helping to resolve market failures, especially those having to do with asymmetric

information. The most noteworthy Fintech solutions involve digital wallets that facilitate debt collection, risk assessment and the reduction of transaction costs; and those connected with the development of algorithms for the execution of risk models and digitalization of the documentation for cost cutting and minimizing operational risk. Despite the fact that these services tend to be delivered by Fintechs, BigTech and challenger companies or neo-banks, traditional banks are beginning to offer them directly or in partnership with those companies.

- **Climate risks created by natural disasters could have an impact on LAC GDAP in the next fifteen years, which would be catastrophic, bringing down the growth rate more than 2%**. According to the Economic Commission for Latin America and the Caribbean (ECLAC), the effects of climate change have reduced the total productivity of agricultural sector elements by close to 20% since 1960. As a result, the development of risk management instruments, especially risk transfer instruments like insurance, is considered highly important, for without them access to financing is extremely difficult. Risk mitigation mechanisms lacking, financial institutions tend to exclude producers unable to provide sufficient guarantees to cover probable noncompliances. For that reason, the importance of R&D is emphasized for promoting and democratizing risk management instruments like insurance, given that this is an effective and efficient instrument for reducing income volatility, facilitating access to credit and increasing investment. Even so, the LAC region is confronting challenges in this area, like a market with little penetration, insufficient information, high transaction costs, little technical capacity and a high reinsurance cost. The region needs for R&D investment efforts to go hand-in-hand with public and private participation, for the public sector, of itself, is only able to produce investment levels that are socially suboptimal or, —more clearly,— insufficient.

- Some initiatives concerning climate change were discussed at the meeting, such as that being implemented by the World Bank in Brazil, consisting of an agricultural climate risk zoning system (ZARC), which aims to identify suitable zones not being financed, by means of meteorological data processing and information retrieval, to serve as a basis for a Banco do Brazil agricultural finance program. In Belize, a Drought Monitoring System (Dromon) is under preparation that will make it possible to communicate affected areas and to channel aid to producers and, although an insurance has not yet been created, one could be useful for that purpose. The World Bank is working in general with representatives of the public, private, academic and other sectors to accomplish the following aims: (i) promote access to

finance by linking up agricultural insurance with the financial system (mitigating risks), (ii) facilitate access to technology and knowledge, (iii) improve the information infrastructure, and (iv) achieve an appropriate regulatory framework.

- **Developments have ranged widely in the entrepreneurial sector.** By way of example, the experience of Cropin Technology was presented. This global intelligence supplier for the agricultural ecosystem seeks to combine the technology with the financial institutions in order to produce a real impact on the farmers by generating reliable and precise data for making business decisions. This is the way sought to reduce climate change risks and uncertainty, bring down operating costs and increase profit margins. Cropin offers a series of services that use artificial intelligence to create models for better decision-making once the data has been collected and processed, and digital applications that permit satellite monitoring of climate conditions and digital integration with human efforts in the field of agriculture. In order to accomplish this, it is first necessary to identify the target public, depending on the region and its performance, then personalized plans are developed to ensure that the services that can be provided are appropriate to the interests of the stakeholder and the farmers. Afterwards, using the results of the last six crop seasons, a risk assessment is made by means of satellite technology. Then, in accordance with the stakeholder's interest, the land is classified by type of crop and size, among other characteristics and the chosen farmers are contacted.

- **The agricultural sector represents an important opportunity for the LAC region for, despite the pandemic, its share of the financial system loan portfolio remained unchanged**. Furthermore, in the current situation, food has been assuming increasing importance, for it has become evident that this is a strategic sector both economically and socially. Food security is key for social peace and reduced dependence on imports contributes to economic stability, particularly in countries that experience fiscal and external deficits. In other regions of the world, the financial sector is oriented increasingly towards the agricultural sector; but in LAC, however, problems like imperfect land markets and a laggard legal system, among other things, hamper its development. Therein lies the importance of insurance, and the incorporation of technologies that make it possible to reduce risks, whether of a climate or any other nature.

- **The experience of the PROAGRO insurance company demonstrated that technology**

has burst upon the scene as a way to improve risk management, and that twenty-first century farmers will have continuous access to specialized insurance systems with highly advanced technology. Seed producers, for example, are provided with an artificial intelligence system, Machine Learning, that permits crop identification by means of photographs, satellite detection of sown fields, intelligent demarcation of lots and inspection of the crop's phenological state and condition. Another example is Colombia's satellite rainfall insurance that offers protection against droughts and overly heavy rainfalls. This insurance operates in 366 municipalities of 14 departments, with over 18,000 smallholders, over 22,000 hectares in more than one thousand communities, and over 70 crops. Satellite rainfall monitoring, the geographic location of cultivated areas, and satellite crop detection take place 24/7, insuring more than US$35.4 million. Insofar as high-precision satellite monitoring is concerned, the case of Puno (Peru) was discussed, where agricultural catastrophe insurance was employed during the 2019-2020 season. In the United States, anti-hurricane insurance was implemented through technology that measures the hurricane path and category, safeguarding agricultural goods within the radius of the occurrence. It should be added that PROAGRO is equipped with a specialized digital platform that enables member institutions to inspect loan documentation, certificates of compliance of insurance terms and photographic and documentary evidence of the condition of the crops through satellite data in real time. The final aim of these products is to reduce transaction costs, decrease climate risks, obtain more income and enhance the viability of agricultural activities.

SUSTAINABLE AGRICULTURAL AND RURAL DEVELOPMENT FINANCE IN LATIN AMERICA AND THE CARIBBEAN: ROLE OF THE PUBLIC DEVELOPMENT BANKS (PDBs)

- **The pandemic turned agriculture into a strategic sector**, inasmuch as the flow of food products was of key importance during its course. Today, the demand for food is rising continuously, but some challenges remain to be overcome: productivity must be increased in order to resolve supply problems. Technological innovations and their finance are required to improve efficiency. Agriculture, however, demands some conditions that financial institutions are unable to create on their own, such as infrastructure and connectivity. The involvement of the state and of people educated and trained in technical and technological

subjects is needed. During the recent COVID-19 crisis, PDBs continued to play their counter-cyclical role, even in an environment of uncertainty and enterprise closings.

- Major challenges exist to the development of rural areas, such as reducing the high poverty and vulnerability rates in those areas and confronting the negative impact of the agricultural sector on the environment by producing a 75% loss in biodiversity, making intensive use of water supplies and degrading 40% of the fertile land. Resolving these problems is complicated because sufficient public resources are lacking and the current situation has provoked a rise in the prices of energy, fertilizers and transportation.

- **Public development banks serving the agricultural sector are better positioned** to: 1) act counter-cyclically and structurally when the financial market is virtually unserved; they can also provide access to financial services as a powerful means of investment and generator of resilience; 2) draw on their global network of customers and raise funds to enable companies to effect their transition to more sustainable commercial models; 3) make use of a variety of investment tools; and 4) test and implement new financial products and regulatory measures with a high level of accountability and impact measurement.

- **Science demonstrates the existence of solutions that offer multiple collateral benefits for the agricultural sector that call for finance for an agri-ecological transition, a new agriculture that would share the following principles:** protection of the soil, diversity, efficiency, recycling, regulations and synergies. The most serious challenges to the sector are: 1) its specificity, which is difficult to monitor and finance; 2) the banks' maturity; 3) political trends; 4) public resources for implementing ESG mandates; and 5) pertinent and good quality data regarding the sector.

- **Banco República de Uruguay (BROU) is one of Uruguay's foremost financial institutions, with a strong tradition of supporting the agricultural sector, whose portfolio targeting the sector represents 42% of the total**. At December 2021, the institution's assets were on the order of US$21,000 million (45% of the market), its deposits numbered US$18,000 million (45% of the market), its loans amounted to US$5,300 million (31% of the market), its corporate default rate was 2%, it possessed 1.5 million customers (43% of the population), it boasted an efficiency rate of 46.3%, and its annual profits were US$391 million. Among the most important products and services it offers the agricultural sector are its Home Banking, the BROU livestock trust, commercial agreements and lending for different purposes and

terms. Accordingly, its loans are: 1) short-term: for crops, pre-market advances, document discounting, working capital, animals for fattening and agricultural credit; 2) medium-term: for equipment, reproducers and breeding animals; and 3) long-term: for project finance and leasing.

- **In 2022, BROU supported the agricultural sector by granting larger loans with longer terms, bonus rates (with discounts) and variable installments, according to the level of production**. In that way, it launched a new line of credit for the purchase of fields for rural smallholders, with the following loan terms: maturities of up to 30 years, financing of 90% of the investment, and a maximum area to be financed of up to 300 hectares, with the possibility of financing at a fixed rate in dollars and bonus rates. It created the Water for your Plot loan for stockbreeders and dairy farmers, which finances investments in water resources of up to 80% of the value of the investment, with a 10-year term and a bonus rate. Guarantee-wise, it has the BROU stockbreeding trust, designed to promote and streamline lending to the sector and make it possible to guarantee loans of all kinds for different financial needs.

- Insofar as environmental protection is concerned, BROU is working on three recent initiatives: 1) the Livestock Environmental Footprint, being boosted by both the public and private sectors, in interdisciplinary teams, which measures the greenhouse gas emissions and consumption of natural resources in livestock production; 2) the sustainable wine growing stamp, which seeks to promote this activity while respecting the environment and minimizing risks in the working conditions; 3) promotion and dissemination of regenerative agriculture, which demonstrates techniques for reconstructing the organic matter and biodiversity of the soil.

- **Among the main functions of Argentina's Banco Provincia de Buenos Aires (BAPRO) are: 1) working together with the National Ministry and that of Buenos Aires Province to develop lines of credit; 2) promoting credit lines that would enable producers to obtain access to loans for investments associated with agricultural sustainability; 3) always being present to serve producers in the event of climate catastrophes like floods or drought; 4) strengthening links with the various chambers or trade associations of the sector's suppliers and with intermediate institutions representing the producers, in order to be able to understand the credit needs of the agribusiness sector**. Several of the bank's actions or advances in regard to sustainability criteria include: 1) adherence to the sustainable finances

protocol and the United Nations global pact; 2) establishment of the sustainable finances management division; 3) provision of sustainable agriculture investment lines; 4) 100% online loan lines; 5) customer coaching in the accomplishment of their social and environmental goals; 6) provision of loan lines for parties affected by natural phenomena; 7) implementation of the Environmental and Social Risk Management System (ESRMS) and 8) relaunching of the "DNI Account" virtual wallet to promote social inclusion and financial education.

- In the case of its financing lines, BAPRO makes the following available to its customers: 1) the Procampo card: intended for the procurement of seeds, phytosanitary products, fertilizers and fuel from affiliated businesses. Some 54% of the bank's loans go to the agribusiness sector, of which 72% are granted at low or very low interest rates. 2) Local currency —pesos— investment finance for the procurement of capital equipment under agreements with local suppliers. Targets SMEs and non-SMEs with investment projects aimed at increasing their production capacity in the poultry and/or porker subsectors. 3) Investment finance in production to reinforce the dairy chain. 4) Sustainable agriculture lines for agricultural producers; and 5) Reinforcement of the fruit production sector for producer SMEs. These financing lines are granted to enterprises established in Buenos Aires Province, chosen by the so-called "Province Trust Fund Underway" and considered to be qualified borrowers. Lastly, the bank has the Drought Emergency line intended for Micro and SME agricultural producers.

FINANCING OF THE SEAFOOD PRODUCTS VALUE CHAIN IN AFRICA: EXPANSION OF THE BLUE ECONOMY

- **The sector and components of the blue economy in Africa generate a value of US$296,000 million, which is projected to reach some US$405,000 million towards the year 2030. Employment-wise, 49 million jobs have been created, which are expected to amount, towards 2030, to 57 million**. The blue economy, which considers the seas and oceans, is a highly important source of growth and innovation for sustainable and profitable economic development, considering that over two-thirds of the planet is covered by water. That significance of the oceans is not limited to the broad range of biodiversity and ecosystems, but extends to the food chains and the means of subsistence, especially for the coast-

al populations. The Micro and SMEs active in the food value chains frequently confront challenges that can even be more overwhelming than those of the agricultural value chains. Risks in the seafood products business tend to be significant because they are highly perishable and catches are uncertain. Deep sea fishing is one of the most risky occupations and in aquiculture or fish farming, fish diseases and water pollution can seriously affect production and trade.

- **Development of a thorough understanding of the blue economy sector is necessary, business opportunities must be recognized and institutions prepared to tackle its challenges**. These ends may be achieved by investing in technology and involving the producers, suppliers and, in general, all of the productive actors, in the sector value chain. Also by financing the procurement of better transport vehicles; offering training in feeding, fishing and conservation; introducing production technologies; and making use of tools for tracking products and digital payments. These actions should be supplemented by taking risk management measures, securing assistance in obtaining certifications, and implementing marketing and advertising plans. As in other sectors, here, also, Micro and SMEs need to surmount barriers to gain access to financial services that would enable them to incorporate technology and undertake innovation within the enterprises.

- **Some types of seafood products are far more nutritious and produce smaller emissions of CO_2 than beef, chicken or pork**. Total fishery and aquicultural production has risen so much over the past 70 years that in 2020 it reached a record level of 214 million tons produced and placed in the food market. As is the case in some other sectors, unfortunately, small-scale producers have no access to formal credit sources and are forced to turn to friends and/or family members, trade associations or speculators. By way of example, in Africa, less than 10% of the small-scale producers have access to formal financing. Most of the financial institutions that have lending programs for the fishery sector report not having had a good experience or witnessed a good performance in this sector. Even so, the financial institutions generally consider that it is possible for loans to this sector to be profitable. The fact is, however, that they are also more risky than other types of agricultural loans, for this is a sector that requires specific technical knowledge. A survey made by FAO in this regard and targeting the financial institutions identified the principal problems being faced by these institutions in offering loans to the fishery sector as being: the lack of guarantees and of fishery associations or properly-operating NGOs to facilitate the loans.

- **As recommendations for making fishery producers more attractive customers for financial institutions in Africa, it was stressed that the producers should organize themselves into groups or trade associations; require financial education, and need to strengthen their relations with their value chains**, so that the smaller fishermen can be better connected with the suppliers of entrepreneurial development services. The lending/subsidy services that exist at the national level in the African region show mixed results, making it important to create national networks to promote knowledge among the financial institutions and with other interested parties, promote fish as a source of nutritious food and help develop a new financial value chain for the fishery sector. This new chain should have the following parties involved as actors: (i) on the demand side, the fishermen and groups/cooperatives; (ii) on the supply side, financial institutions of all kinds (public, commercial, international financial institutions, and microfinance institutions), social/environmental investors; and (iii) development NGOs (multifunction); local and regional governments, governmental departments, the central bank and the financial regulatory and supervisory agency.

- **The similarities and differences between the value chains of the fishery and agricultural sectors stem for the most part from the way they carry out their business and the risks involved**. Agriculture, for example, depends on policies and technology, while fisheries rely on quotas, plans for their management and regulations. The risks in the former case are government policies and pests that damage crops, while in the latter, they are ebb and flow seasons and the declining and migratory nature of fish populations. They share some similarities relating to the funding of the organizations and of their value chains. The fishery value chain, however, has some unique characteristics related to the fishery financial value chain that have to do with the finance of their means of subsistence, of their adaptation, of their off-season activity and of their linked financing. Considering its characteristics, there are some points at which opportunities for financing the fishery sector can be created: for the producers, through mechanisms that would enable them to obtain financing, which is complicated due to their lack of guarantees or the high transaction costs involved; for the suppliers/buyers/processors, offering a way to build sound buying and selling relations favoring growth of the market; and for the suppliers of financial services, offering well-informed ways of lending, supplying personalized products and services, and reducing financial costs and risks.

- **The following recommendations were offered for boosting the sector of fishery pro-**

ducers: i) to the national governments: creating regulations for the lending policies of the microfinance and insurance sector; ii) to the financial institutions: training their personnel to provide financing to the fishery sector, given its nature and risks, like considering its production cycle; and iii) to the international/regional organizations: providing funds and support to boost the development of the enterprises in the seafood products value chain by building and strengthening capacities through the CAFI-SSF Global Network for Capacity Building to Increase Access of Small-Scale Fisheries to Financial Services, which receives FAO support for facilitating and expanding fishery finance programs.

- Guidelines have been able to be developed for Africa aimed at the microfinance, lending and insurance services for small-scale fishing through the CAFI-SSS Global Network. The aims of the Network are: to increase promotion and consciousness-raising; permit capacity-building and the exchange of knowledge; support innovative programs that appropriately meet microfinance, credit and microinsurance needs; and promote and increase collaborative efforts among Network members in order to strengthen the existing associations and build new ones. The Network also provides: policy research services based on experiences and advisory services for the actors in small-scale fishing; capacity development in the institutions and of the personnel serving the sector; support in developing training tools and materials; technical assistance for the development of innovative products, projects and programs; and identification and documentation of case studies in order to extract the lessons learned.

- Potentials of Tanzania's agricultural and fishery sector: with a land area of 945,808 km2 (60% of it arable), it possesses water sources thanks to its large lakes covering 54,337 km^2 and interior waters measuring less than 5,000 km^2; its territorial sea is 64,000 km^2 and runs along the over-more-than 1,400 km coastline; and its exclusive economic zone is 223 000 km^2. The country has an aquicultural –fish farming– potential in fishery cages and pools, and a good geographic diversity adequate for the production of multiple crops. The agricultural sector employs 75% of the population and contributes 25% to the country's GDP. CRDB Bank Plc. makes diverse financial products and services, like loans, platforms and digital agents, available to the fishery sector. It also introduced a unique financial model backed by group guarantees that enjoys government participation through the ministries of the blue economy/livestock and fisheries, which promotes investment in fisheries and aquiculture.

- **It was stressed that sustainable finance has been channeled in the particular case of Tanzania toward sectors like infrastructure, commerce and tourism, agriculture and climate finance**. In CRDB BANK Plc., agricultural value chain finance focuses on the use of structured finance models, which include: guarantee and warranty management; the use of associative financing systems; enjoyment of the advisory assistance of DAFS donors for fund guarantee coverage; the use of tripartite agreements to demarcate the cash flow; group presentation of farmers and fishermen as suppliers associated with key buyers; the promotion of financial inclusion, and the increase in financial support for investors in forestry, crop production, stockbreeding, and fisheries. The bank's goal is to increase its market share in the agricultural sector, presently at 43% and representing some US$320 million, to some US$750 million in 2025.

- **Gender issues in the small-scale fishery business. Women's participation in the fishery sector value chain in Kenya is disproportionate, above all in the product marketing segment. Coastwise fishing is dominated for the most part by men, with women's involvement being concentrated primarily at the secondary and tertiary levels of the value chain, mainly in post-catch activities like fish processing or its sale in the local markets (by what are commonly known as "Mama Karangas")**. The Mama Karangas group exists side-by-side with male fishery sellers, who tend to concentrate on more costly species and do not concern themselves with their processing. The fishery sellers compete for the purchase of different species of fish; some specialize in one species, while others purchase a variety. Mama Karangas prefer to bargain directly with the fishermen on the beach, instead of at the market, to secure the best prices and freshest fish. Their access to the product, however, tends to be difficult because of the social pressure brought to bear by male fishermen. This has resulted in practices that are offensive to the women, who tend to arrive earlier than the men at the places where the product is on display for sale, performing some secondary activity as they await the fishermen.

- **Most Mama Karangas are school drop-outs and depend on sales as their only source of income, which is generally very low, between US$2 and US$5 per day. Women in processing facilities generally do the hand-processing, while the men perform supervisory roles**. Despite the gender-dominated barriers, Mama Karangas serve as a vital link between the fishermen and the impoverished fish eaters who are their target market. Nonetheless, some changes can be noted, as women with more education or access to the resources are getting

more involved in profit-making activities that add value. Granjas Kati in Uganda, for example, is a fishery processing enterprise founded by a woman who entered into an association with more than 1,000 female fish farmers. Granjas Kati produces 17 unique fish-based products, exports to 13 African countries and has a staff of 38 workers. Similarly, in 2017, Mayungu High Vision Women Group, made up of 11 women, started out as a Village Savings & Loans Association (VSLA), drawing only on their personal savings, and advanced from there to further a poultry raising and fish marketing project. In 2018, the organization participated in the Youth Economic Empowerment Project through the agribusiness implemented with IFAD financing where, after intensive training, they were able to register as a Self-help Group. In 2019, they opened a savings account in the Kenya Commercial Bank, in which they declared having deposited their daily profit, and kept proper registers. That same year, they procured a refrigerated room (freezer) on credit. In 2020, they won a US$2,000 subsidy, which they invested in the purchase of a boat with an outboard motor and a portable refrigerator. The group now employs a crew (men) to handle the boat, have access to high-cost fish and sell the surplus to other female retailers in the area.

- **Based on what was noted in Africa, and in order to address the challenges faced by women in small-scale financial systems, who are working in the blue economy, the following were suggested:** 1) their transition towards formal financial institutions, inasmuch as most of the women belong to the VSLA savings groups, and the registration of these groups as legal entities is imperative, for it would enable them to open bank savings accounts and develop the credit profiles needed for investment purposes; 2) financial literacy training is necessary for them to develop the commercial capacities and skills that would help them cross the thresholds required to accede to the financing mechanisms at the national and local levels; and 3) policy intervention. National governments made huge efforts to provide concessional funds to women's groups, but more needs to be done to sensitize and protect the human and moral integrity of the women in the fishery value chains.

INCLUSIVE GREEN FINANCE AS A CRITICAL TRIGGER FOR A SUSTAINABLE AGRICULTURE AND FOOD SYSTEM

- **Climate change in many regions of the developing countries is reducing the productivity of agriculture and altering the value chains. High temperatures and extreme climates**

at the global level are already damaging agricultural activities and the lives of millions of people, the lack of supplies and of water is creating famines that, with the passing of the years, are only expected to grow worse. In the Philippines, the annual number of typhoons is rising and at present amount to 20 per year, with catastrophic effects. For that reason, the agricultural sector is highly vulnerable, with losses between 2010 and 2019 amounting to US$5,900 million. The number of financial institutions, investors, governments and international agencies interested in investing in a green finance agenda has risen in recent years. Collaboration among these institutions is key for mitigating the damages produced by climate change and creating stronger and more resilient agricultural communities in the long term.

- Cambodia, a Southeast Asian country, has a land area of 182,035 km^2. Its principal industries are agriculture, textiles, construction and tourism, all of which are susceptible to climate and health shocks. As a result of the pandemic, the contribution of these sectors to the country's GDP fell 3.1% in 2020. Due to a timely public policy, however, it is projected to grow almost 6.6% at 2023. Furthermore, as of 2020, a structural change is being worked in the country's economic model, which has reduced the participation of the agricultural sector by 20 percentage points, leaving it now at a level of 20%. The country is economically stable, with inflation running at an average of 2.5% and growing income; but in social terms, the poverty rate is still high (17% in 2017). **Cambodia is vulnerable to the effects of climate change, as expressed in heavy rainfall, high temperatures and rising sea levels**. The number of "hot days," with temperatures reaching 46 °C over the year, has been rising during the past century. In the year 2022 alone, floods affected 14 of the country's 25 provinces, damaging the rural infrastructure and agricultural production, and annual rainfall is expected to increase 12.6% towards the year 2030.

- The Agricultural and Rural Development Bank (ARDB) is a public bank created to help the agricultural sector and reduce poverty in the rural areas of Cambodia. Its functions are various: a) to develop strong connections among the actors of the agricultural value chain and the rural sector through integral financial services; b) to identify, coordinate and resolve market shortcomings in the agricultural and rural sectors by means of strategic associations; c) to enhance the diversification of the rural economy by providing financial services to rural SMEs; and d) to promote saving in the rural sector. ARDB plays a leading role in the country's green finance that is reflected in a series of measures taken in recent years: in 2017, it

established a social and environmental policy for the institution; in 2021, it created a work group on green finance; in 2022 it established a green loan policy and created an exclusive area for green finance, which it aspires to accredit. Its portfolio of green loans is still limited, equivalent to only 4.1% of its total portfolio, but it expects to raise this percentage to up to 15% over the next five years. Today, its holdings of green loans are distributed as follows: climate resilience (58.9%), irrigation systems (23.7%), agricultural crops (13.2%), green housing (3.3%), hydroponic systems (0.8%) and solar systems (0.01%).

- **At COP26, Vietnam committed to cutting greenhouse gas emissions, mitigating the impact of climate change and promoting sustainable development**. During the period of 2017-2021, some 30 financial institutions granted green loans, for a sustained growth of 25% a year, with 33% the following year (2021), and in November 2022, projected green loans rose 7%. Support for the promotion of green finance consisted, in the case of the Vietnam Bank for Agriculture and Rural Development – Agribank, of 1) deploying seven loan support programs and two programs with national objectives; 2) implementing internal mechanisms and policies; 3) providing two single models for creating mobile transaction points through specialized vehicles and associative credits for rural producers experiencing bankability problems; and 4) participating actively in projects relating to environmental protection, financed by the World Bank, such as improving the quality and safety of agricultural products, implementing biogas programs, and wind-generated electricity projects in two of the country's provinces. It also participated in low carbon-emission agricultural projects, clean water projects and hygiene in rural areas and the implementation of a preferential loan program for organic farming.

- **Agribank follows a planned strategy for the application of ESG criteria in its activities**. That entails having 1) environmental standards, such as executing credit programs for environmentally friendly projects, applying ESG initiatives in the bank's everyday operations and organizing activities for safeguarding the environment; 2) social standards, like caring for its personnel through labor unions, the deployment of social welfare programs and preferential loan programs for persons suffering the negative effects of the pandemic; and 3) governance standards committing it to act transparently in all of its activities and ensuring that management is selected with the greatest of care. The bank is expected to continue on a course of green credit development in the future under the following standards: 1) maintaining its position, considering that it is a state bank with commercial activities that plays a basic

role in benefit of its country; 2) fulfilling its mission by providing loans and services to the agricultural and rural sector; 3) seeking improvement, becoming more competitive, with a greater financial capacity and operational efficiency; and 4) obeying international corporate governance standards and practices.

- **Agriculture is one of the three principal economic activities in the Philippines, contributing 10% to GDP and employing 11 million people (24.5% of total workers)**. Given its importance, it is imperative to enhance its resilience and production and its greatest challenge is climate change. Today the country is located midway down the table of food security rankings (number 64 of 113 countries) . As in the case of other Asian countries, climate change devastation produces production losses; these amounted, between 2010 and 2019, to 100%, with typhoons as the cause of their main losses (88%). Programs and policies to improve climate resilient agriculture (CRA) are put forward as solutions in this context, with the following being particularly relevant: 1) policy frameworks, like the modernization of agriculture and fishing (1997), climate change (2009) and the improvement of agricultural, fishery and rural finance (2022); 2) mandates that provide strategic direction and supervision for fund raising and capacity building to achieve the ACR agenda; 3) programs like the Adaptation and Mitigation Initiative in Agriculture (AMIA); and 4) proactive efforts and support by organizations such as government agencies, international organizations, study centers, NGOs, local governments and the private sector.

- **The Adaptation and Mitigation Initiative in Agriculture (AMIA), for its part, focuses on the empowerment of local communities in order to confront the adverse effects of climate change**. The program establishes model communities called AMIA villages that will serve as reference points so that other communities can learn from and replicate them, and where technological and institutional innovations will be introduced so that these villages will be able to obtain access to climate-related support services. AMIA's goals are: 1) to identify and understand its vulnerability to climate change; 2) to utilize reports based on meteorological and climate analyses in general, in order to identify what and when to plant and what crop growing practices to adopt; 3) to test and adopt practices, technologies and tools appropriate to climate resilient agriculture (CRA); 4) to provide training in productivity enhancement technologies; and 5) to identify the support services that are needed, like climate information, finance and insurance. Some of the Initiative breakthroughs are having established 150 AMIA villages and raised income levels and yields, together with an improvement

in the farmers' wellbeing as a result of the adoption of climate resilient agricultural practices.

- **Farmers' resilience financing**. Under the 2022 Law for improvement of the financing of agricultural, fishery and rural development, banks in the Philippines must reserve at least 25% of their loan portfolios to finance that sector over a 10-year period (2022–2032). These initiatives, including ecological projects, in order to be eligible for that financing, must comply with social and governance standards. Provision is also made for survival and recovery (SURE) loans for small-scale farmers and fishermen in the zones affected; these are a kind of quick aid in the form of loans following natural disasters. They make it possible to assist in their recovery, production capacity and to generate income for their survival.

- In short, **in the case of the Philippines, although finance in the case of climate change is integrated with national development planning and with the financial resources that are available, the number of national financial institutions that support climate resilient agricultural activities is limited**. Insufficient access to financing also constitutes an important obstacle to agricultural development. Now considered necessary are: 1) alliances to guarantee synergistic results at the local level; 2) the application of policies to sustain initiatives that are underway in the various institutions that support climate resilient agriculture; 3) a larger measure of promotion and expansion of climate resilient agricultural technologies and practices in order to guarantee a greater impact; and 4) national and international public and private resources to fill the existing financial gaps for climate action. It should be added that, in the case of Asia, the financial gap in the blue economy is estimated to amount to US$5.5 billion (based on 28 country reports), and that SMEs account for up to one-half of that total.

- Cambodia's principal economic activities are agriculture, textiles, construction and tourism. With GDP growth in the neighborhood of 7% since the year 2016 and prior to the outbreak of the health crisis, it now ranges from 5% to 6% a year which, in monetary terms, represents almost US$32,300 million. With close to 17 million inhabitants, it has a per capita income approaching US$ 1,700. Cambodia's Agricultural and Rural Development Bank (ARDB Bank), with a vision of becoming the country's sustainable rural development bank, takes care of its rural financing. The bank reaches 7.9 million agricultural households (98% of the total) and has assets totaling US$61,160 million, a loan portfolio of US$43,400 million and US$51,370 million in deposits. Some of the bank's milestones are 1) pioneering agricultural credit (1967 -1976); 2) integrating its loans with other services (1977-1986);

3) expanding its project loans (1987-1996); 4) achieving the modernization of the system and adoption of the philosophy of the economy of sufficiency for community development (1997-2006); 5) boosting the decade of sustainable solutions for the problems of informal farmer debts (2007-2016); and 6) focusing on integral agricultural and rural development (2017-the present).

- **In order to fight climate change-generated threats, ARDB Bank provides green finance in two ways: On the one hand, by attracting ad-hoc resources known as green bonds. These are emitted and offered in accordance with the ASEAN Green Bonds regulation and the Green Bond Principles of the International Capital Market Association**. In August of 2020, ARDB Bank issued and offered two series of green bonds for a total amount of US$162 million, one US$121 million green bond issue at 5 years with a coupon rate of 1.76% a year and another for US$40 million at 10 years with a coupon rate of 2.76% a year. And on the other, by offering green credit finance of three types: 1) for organic products and food security, created to meet the needs of consumers and that center on healthy foods and promoting ecological agricultural production or food security; 2) for conservation of natural resources and the environment by seeking to control pollution and through sustainable water management; and 3) to promote the use of alternative and renewable energy sources. It should be added that all of this is accomplished within the framework of Cambodia's national policies and institutions.

- The following conclusions can be stressed, based on the experience in Cambodia and the ARDB Bank: 1) SME development is important as a driving force for the agricultural sector supply chain; 2) in order to boost sustainable agricultural growth, the capacities of the principal components of the supply chain must be improved; 3) creating a wide range of services that satisfy customer needs in each supply chain will lay a sound foundation for future growth; and 4) developing financial products that not only bear in mind the specific needs of the customers, but also of their stakeholders, will result in the sustainable growth of the entire organization.

GUARANTEE SYSTEMS AS DRIVERS OF AGRICULTURAL FINANCE

- **In Spain, guarantee systems for the production sector bear important weight within their regional environments. The guarantee systems and their implementation are heterogeneous, as are their business models**. At the close of 2021, agricultural, food and fishery indebtedness rose 2.9%, or some 661 million euros more than the total recorded in 20020, which amounted to 22,285 million euros. For their part, loans for all production activities in 2021 were encountering problems, resulting in a 4% reduction; the default rate declined 0.4 percentage points in the agricultural sector and 0.8 percentage points in the fishery sector and today is situated at 5.1% in the agricultural sector and 6.2% in the fishery sector. Financing as a basic tool for the development of the agricultural and fishery sector is offered in different forms: (i) with the financing of investments at the beginning and during the development of the operation; (ii) financing of working capital during the operation's development; (iii) financing of liquidity in special situations; and (iv) financing in the transfer of enterprises and in generational renewal. Furthermore, access to financing is promoted as a public policy accompanied by other instruments such as guarantee coverage.

- **Spain's Sociedad Anónima Estatal de Caución Agraria (Saeca) is a public corporation whose shareholders are Sociedad Estatal de Participaciones Industriales (SEPI) with 80% and Fondo Español de Garantía Agraria (FEGA) with 20%**. SAECA's mission is to provide guarantee coverage to the entire production sector (agriculture, forestry, fisheries, agri-food industry, and the improvement of rural areas), so that it can have access to financing on favorable terms. In order to accomplish this, it is equipped with the following products and programs: 1) financing lines for investment and a money supply with SAECA guarantee coverage, like the Investment and Money Supply Line (SAECA I&C Line), the Finance Line for Farm Loan Banks (CCRR Line), the Financing Line of the Ministry of Agriculture, Fisheries and Food (MAPA-SAECA Line), the Centralized Management Financial Instrument (IFGC) the SGP Fishery Line, and the Agri-Insurance Line. All of these cited initiatives are intended to serve as instruments of the public policy defined by the Ministry of Agriculture, Fisheries and Food (MAPA); the latter, as a branch institution of the public budget, subsidizes the cost of the SAECA avals and exerts tutelary oversight of the corporation's activity, all of which enables it to reach its basic goal, which is to be a facilitator of access to financing under the best conditions. The SAECA guarantees are known for permitting access to financing with-

out any need for real guarantees. In that way, production enterprises can accede to working capital or investment finance (up to 100% of the amount) for a 15-year term; receive preferential rates thanks to agreements with financial institutions and interest-free advance repayment; in addition to the possibility of obtaining a subsidy at the expense of the guarantee; obtain tax benefits on patrimonial conveyances and documented juridical acts (ITAJD); and offer coverage of up to 100%.

- **Portugal's reciprocal guarantee companies (RGCs) are a system for providing support to the Portuguese SMEs, which operates by issuing financial guarantees to facilitate access to credit under more favorable conditions for the investments and economic cycles of these enterprises**. RGCs have considerable advantages for the enterprises, because they make the size and history of the firm less important for obtaining loans. They also reduce the need for real guarantees, support access to loans on better financial terms as to amounts, costs and more adequate conditions. They are convenient for banks because they share the credit risk, which permits better terms; in addition to helping identify the most appropriate financial solution, they also contribute to freeing bank maximum lending levels and help improve the profitability and reduce the need for funds of their own and deteriorations.

- One of the institutions among Portugal's RGCs is **Agrogarante, which supports enterprises in the production sector (like agriculture and forestry) by providing them with guarantees of all kinds to facilitate their access to credit and compliance with contractual responsibilities**. Among the special measures taken to support employment and the normalization of business activities amid the devastation produced by the COVID-19 pandemic, it adhered to one of the four government economic support lines of credit (LAE) called "Small Mid Caps, Mid Caps" SME support. This line enables these enterprises to obtain financing on better terms as to price and time period. In order to develop this initiative, digitalization and debureaucratization processes had to be hastened, working in close collaboration with the banks and improving marketing periods. Agrogarante's aim is to create economic instruments respectful of the environment, support innovation, reforestation, more effective policies on water and waste treatment and reinforce consumption and sustainable production –in other words,-- it assumes responsibility for financing entrepreneurial initiatives in the production sector and other sectors that have a significant impact on the country's sustainable development, like investments in the blue and green economies. It also seeks to be a referential enterprise for the introduction of digitalization of Portuguese RGC products. A digital prod-

uct is being jointly developed with a bank for this purpose, through which enterprises will be able to accede to loans guaranteed by Agrogarante, using a mobile application or navigator.

- **In Colombia, the Fondo para el Financiamiento del Sector Agropecuario (FINAGRO) is committing itself to democratizing agricultural credit by means of lines of credit for the inclusion of the subsistence economy, using global funding and global guarantee mechanisms and with loans for offers**. The structural challenges that sustain the importance of FINAGRO's offers are the existence of 44.6% rural monetary poverty, 52% informal land tenure, and a 154% gap in on-holding productivity. The financial inclusion of small producers is a key commitment to credit democratization in Colombia. Some advances were made in 2021, with the result that there are 60% new beneficiaries. Even so, challenges exist to reaching the potential beneficiaries, amounting to close to 800 thousand. In this aim, the development banking system represents an integral proposal for improving the living conditions of rural inhabitants and agricultural producers. FINAGRO channels loans through the banks, administers the Agricultural Guarantee Fund (FAG) and operates risk mitigation instruments for the development of rural and production projects.

- The FAG, as a specialized fund, will guarantee loans and microloans granted to individuals or legal entities for the purpose of financing agricultural and rural sector projects, under FINAGRO conditions. **Financial intermediaries are responsible for assessing the credit risk of loans to be guaranteed by the Fund. This is a key mechanism for the inclusion of small producers**. Inasmuch as 98% of the guarantees that were granted target this segment, 80% of the guaranteed credit is concentrated in production activities, 62% of the producers made use of the guarantee for the first time in 2022, and the financial intermediaries that used the FAG have achieved 40% growth over the past 3 years. The FAG has augmented the financial inclusion of rural territories in Colombia. The growth in the number of guaranteed loans (48%) is a consequence of the larger territorial coverage being attained by the Fund. The next step is to continue extending that coverage to more scattered municipalities, those that concentrate the greatest vulnerability and the highest levels of rural poverty, inasmuch as the guaranteed value has been concentrated in population groups with moderate levels of poverty. In order to confront the challenge of increasing financial inclusion, the Fund considers that it needs to have a strategy of integral inter-institutional coordination through technical assistance, access to public goods, formalization of land tenure and access to insurance and guarantees. The FAG is also a source of pertinent information for focusing

public policy, for it makes it possible to determine those elements that play a part in orienting the guarantee and also contributes to the coordination among institutions of the agricultural sector for addressing problems that affect the consolidation of production projects. Agricultural guarantees are expected to play a basic role in the coming years, inasmuch as the FAG is a key tool for the financial inclusion of production by contributing to the government's integral strategy, financing sustainable and inclusive agendas, increasing productivity through investment loans, and linking up important actors (thereby ensuring that the Fund guarantees operations above and beyond those of the Agricultural Bank and also involves the cooperatives).

- **Los Fideicomisos Instituidos en Relación con la Agricultura (FIRA) – Banco de México, as a wholesale development bank, operates with financial intermediaries through finance programs, guarantees and technical assistance**. FIRA's instruments are financial and technological. The former seek to increase the offer by providing funding and guarantees; and the latter, to strengthen the demand through training, technological innovation, technical assistance and strategic alliances. At October 2022, the total balance of the Mexican institution's loans and guarantees was US$11,282 million, and the unfunded guarantees showed real growth of 9.5%. FIRA currently participates in 64% of the bank loans targeting the agrifood sectors. Mexico has low levels of financial inclusion that are even more prevalent in the agricultural and rural medium; in this sense, FIRA, through a diversity of strategies and actions, promotes this sector's inclusion with the provision of guarantee systems, risk management instruments, products in line with the needs of agricultural producers, programs of integration with value networks, technological innovations, and training. As a result, FIRA created a state first loss guarantee fund to serve these producers, with a coverage of 12%, in which the contributing institutions in the state governments grant 5.9% of the resources for creating the guarantees and FIRA, 6.1%. With those resources, the financial institutions guarantee 100% of the first nonpayments. This guarantee, which has been operating for 14 years and in which 113 financial intermediaries have participated, has had a multiplier effect of 42.9 times on the resources received from the government. A total of 75% of the supported credit has been allocated for production activities. With this guarantee, more than 8 million producers have been accredited, of which 40% are women. In order to create the first loss guarantee fund, FIRA entered into a strategic alliance with the Ministry of Economy. As a result, in addition to the national program, there are 18 state funds, inasmuch as each state defines its contribution and eligible activities (with a multiplier effect of 20.1 times the

resources contributed). FIRA has been firmly established as a point of reference in the sector, permitting it to gain the trust of the private sector for the management of the resources. It also allots, promotes, supervises and oversees the loans and manages the resources that have been contributed. The financial intermediaries are responsible for the decision to grant loans based on their prudential criteria.

SPEAKERS AND PANELISTS
FIRST DAY

Opening session

- Alan Elizondo, Director General, Fideicomisos Instituidos en Relación con la Agricultura (FIRA) – Banco de México.

- Carlos Linares, President, Latin American Association of Development Financing Institutions (ALIDE).

- Víctor Manuel Villalobos Arámbula, Secretary of Agriculture and Rural Development of Mexico.

- Alvaro Lario, President, International Fund for Agricultural Development (IFAD).

- Eduardo Vasquez, Head of Institutional Relations, Latin American Association of Development Financing Institutions (ALIDE).

Session 1: Response to the New Global Scenario: Agricultural Development and Sustainable and Inclusive Food Systems

Moderator

- José Luis Negrín, Director General of Financial Services Evaluation, Banco de México.

Panelists

- Máximo Torero, Chief Economist, Food and Agriculture Organization of the United Nations.

- Rossana Polastri, Regional Director for Latin America and the Caribbean, International Fund for Agricultural Development (IFAD).

- Ernesto Hugo Stein, Representative in Mexico, Inter-American Development Bank (IDB).

- Frank Rubio, Senior Coordinator, Smallholder and Agri-SME Finance and Investment Net-

work (SAFIN)/ technical adviser, Agri Business Capital (ABC) Fund.

Session 2: Technological Innovations for Agricultural Finance in Latin America

Chairman of the Session

- Alan Elizondo, Director General, Fideicomisos Instituidos en Relación con la Agricultura (FIRA) – Banco de México.

Panelists

- Hector Peña, agriculturtal economist, senior consultant, World Bank.
- Kunal Prasad, cofounder and Director of Operations, CropIn Technology.
- Juan Carlos Cortés, gerente general, PROAGRO, Mexico.

Session 3: Sustainable Agricultural and Rural Development Finance in LAC: Role of the National Public Development Banks

Moderator

- Romy Calderon, Head of Economic Studies and Information, Latin American Association of Development Financing Institutions (ALIDE).

Panelists

- Gabriela Fernández, Corporate Executive Manager, Banco de la República Oriental del Uruguay (BROU).
- Claude Torre, Project Director, French Development Agency (AFD).
- Lucia Saavedra, Agricultural Banking Department, Banco de la Provincia de Buenos Aires (BAPRO).

SECOND DAY

Session 4: Financing of the Seafood Products Value Chain in Africa: Expansion of the Blue Economy

Chairman of the session

- Thomas T. Essel, Secretary General, African Rural and Agricultural Credit Association (AFRACA).

Panelists

- Thomas Gietzen, International Consultant, Food and Agriculture Organization of the United Nations (FAO).
- Suchitra Upare, Coordinator, CAFI-SSF Global Network for Capacity Building to Increase Access of Small-Scale Fisheries to Financial Services.
- Maregesi Shaban, Senior Manager for AgriBusiness, CRDB Bank Plc. Tanzania.
- Rachel Karembo Mweni, Projects Coordinator, USTADI Foundation, Kenya.

Session 5: Inclusive Green Finance as a Critical Trigger for a Sustainable Agriculture and Food System

Chairwoman of the Session

- Cecilia Cayosa Borromeo, President and Executive Director, Land Bank of the Philippines (LANDBANK): Introduction to the topic and opening remarks

Panelists

- Soeng Reth, Deputy Executive Director, Agricultural and Rural Development Bank (ARDB), Cambodia.

- Nguyen Tuyet Duong, member of the Board of Directors, Vietnam Bank for Agriculture and Rural Development, Vietnam.

- Norman William S. Kraft, Director, Department of Agriculture- Agricultural Credit Policy Council (DA-ACPC), the Philippines.

- Wichai Paksa, Deputy Senior Vice-President, Bank for Agriculture and Agricultural Cooperatives (BAAC), Thailand.

Special Talk: Public Agricultural Development Bank Platform for Green and Inclusive Food Systems

- Claude Torre, Project Office, French Development Agency (AFD).

- Olivier Pierard, Consultant, International Fund for Agricultural Development (IFAD).

Session 6: Guarantee Systems as Drivers of Agricultural Finance

Moderator

- Luz Stella Lozano, Secretary General, REGAR – Ibero-American Guarantee Network.

Panelistas

- Pablo Pombo, presidente de la Junta Directiva, SAECA – Sociedad Anónima Estatal de Caución Agraria, España.

- Antonio Gaspar, presidente ejecutivo, Agrogarante – Sociedad de Garantía Mutua, Portugal.

- Ángela Penagos, presidenta, Fondo para el Financiamiento del Sector Agropecuario (FINAGRO), Colombia.

- José Antonio Cortés, director general adjunto de Promoción de Negocios, Fideicomisos Instituidos en Relación con la Agricultura (FIRA) – Banco de México.

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